

# EXTERNAL IMBALANCES, GROSS CAPITAL FLOWS AND SOVEREIGN DEBT CRISES

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# EXTERNAL IMBALANCES, GROSS CAPITAL FLOWS, SOVEREIGN DEBT CRISES

- ▶ Recent experience in the euro area
  - ▶ Current account imbalances
  - ▶ Expansion of gross external positions
    - ▶ Intermediation of capital flows
  - ▶ Sovereign debt crisis
    - ▶ Severe recession in Periphery, slow growth in Core

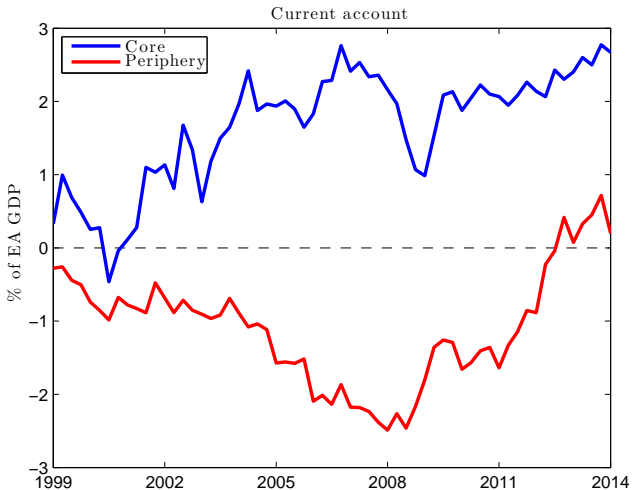
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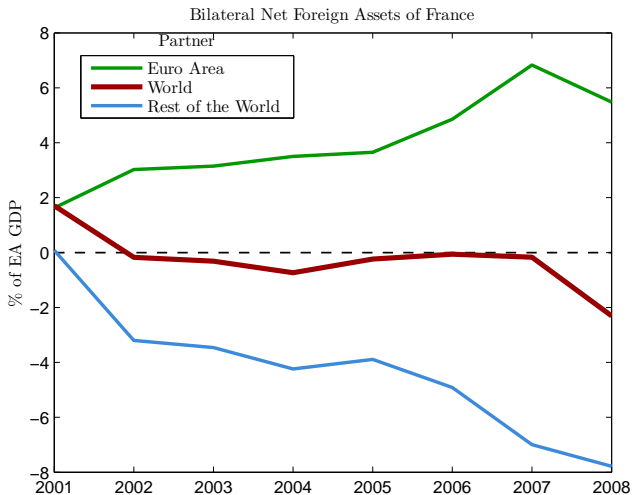
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  - ▶ Implicit subsidies on cross-border asset holdings
  - ▶ Financial regulation, bailout expectations

# CURRENT ACCOUNT IMBALANCES

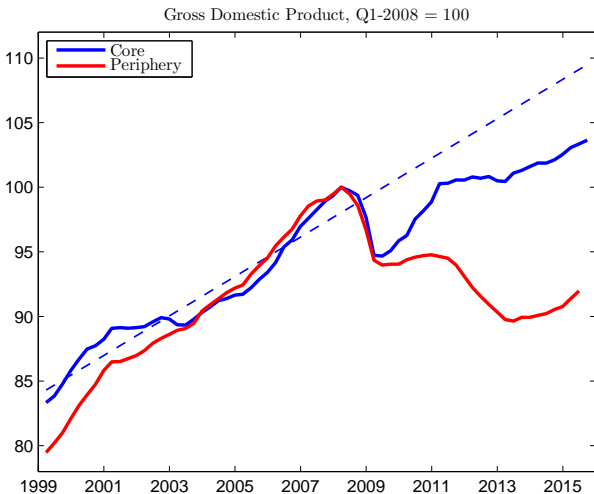


Core = AT, BE, DE, FR, NL. Periphery = EL, ES, IE, IT, PT. Source: OECD.

# BILATERAL NFA POSITIONS - INTERMEDIATION



# EUROZONE DEBT CRISIS



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# CAPITAL FLOWS, CRISIS AND POLICY DISTORTIONS

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  - ▶ Heterogeneous countries and Rest-of-the-World



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- ▶ Quantitative model calibrated to euro area economies

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  - ▶ Rescue programs and non-standard monetary policy
- ▶ Creation of single currency
  - ▶ Eligibility of €-government debt as ECB collateral

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- ▶ Transmission and amplification of a debt crisis
  - ▶ Tightening of cross-border financial linkages



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  - ▶ Periphery cannot commit to always repay debt
- ▶ Trade in goods
  - ▶ One homogeneous good, freely tradable across all countries
  - ▶ Heterogeneous goods and trade integration will play important role in a crisis event

# OPTIMIZATION PROBLEM - PERIPHERY

- ▶ Lifetime utility

$$u(c_1) + \beta \mathbb{E}[u(c_2)]$$

- ▶ Period budget constraints

$$c_1 + q_H b_H = y_1$$

$$c_2 = y_2 + \underbrace{(1 - D_H) b_H}_{\text{Repayment}} - \underbrace{D_H \zeta}_{\text{Default}}$$

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- ▶ Limited commitment

$$\text{Default cost } \zeta = \begin{cases} \hat{\zeta} > 0 & \text{w.p. } \pi \\ 0 & \text{w.p. } 1 - \pi \end{cases}$$

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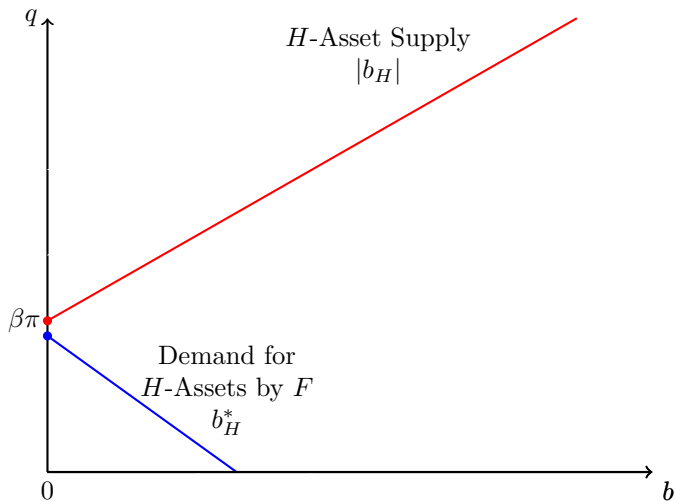
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- ▶ Financial autarky is also optimal in Core
  - ▶ Flat endowment path implies no borrowing or lending motive



# BENCHMARK UNDISTORTED ALLOCATION



# SUBSIDY ON ASSET HOLDINGS IN THE ECONOMIC UNION

- ▶ Bailout promise offered to households in the Core
  - ▶ Households expect full compensation in the event of default by Periphery
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- ▶ Bailout transfers financed by all Core-households via taxation
  - ▶ Effects of asset purchases on taxation are not internalized
  - ▶ Individually, households perceive Periphery-debt as risk-free

# OPTIMIZATION PROBLEM - CORE

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$$u(c_1^*) + \beta \mathbb{E}[u(c_2^*)]$$

- ▶ Initial-period budget constraint

$$c_1^* + q_H b_H^* + q b_{ROW}^* = y^*$$

- ▶ Bilateral external positions
  - ▶ Gross assets,  $b_H^* > 0$
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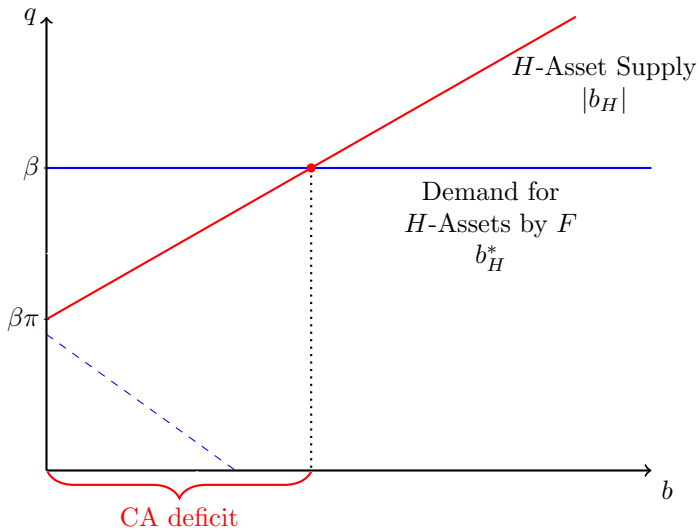
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- ▶ Terminal period

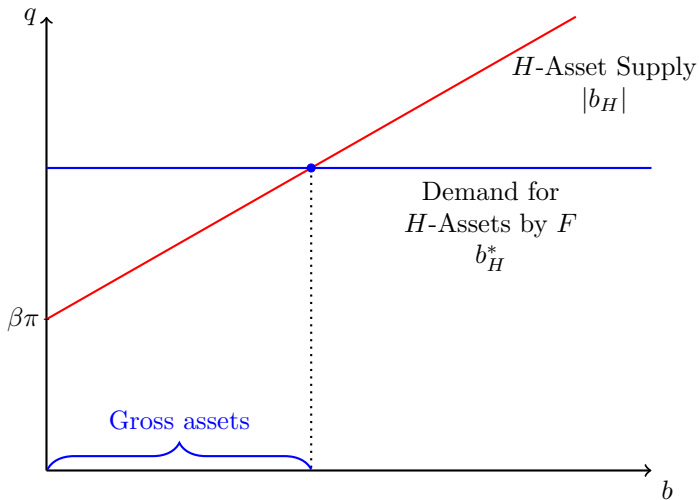
$$c_2^* = y^* + b_{ROW}^* + (1 - D_H) b_H^* + \underbrace{D_H (b_H^* - t^*)}_{\text{Bailout promise}}$$

# EQUILIBRIUM WITH SUBSIDY CURRENT ACCOUNT DEFICIT IN $H$

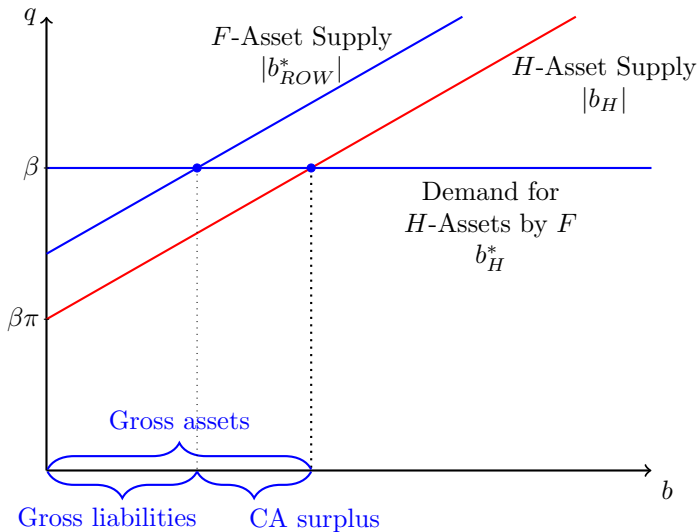


# EQUILIBRIUM WITH SUBSIDY

## NET AND GROSS POSITIONS IN $F$



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  - ▶ Result arises if Periphery specializes in goods not traded with *ROW*

## KEY RESULTS IN A NUTSHELL

- ▶ A bailout promise on risky assets generates in the model:
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- ▶ In a crisis:
  - ▶ Transmission of crisis within economic union
  - ▶ Deeper recession in the Periphery

# QUANTITATIVE FRAMEWORK - KEY ELEMENTS

- ▶ Infinite-horizon economy
- ▶ Continuum  $I$  of heterogeneous countries
  - ▶ Idiosyncratic income shocks
- ▶ Limited commitment
  - ▶ Endogenous sovereign default a la Arellano
- ▶ Endogenous distribution of net-foreign assets



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- ▶ Endogenous distribution of net-foreign assets
- ▶ Compare stationary allocations with and without bailout promise on union-issued assets
  - ▶ Comparative static exercise

# INFINITE-HORIZON ECONOMY

► Preferences

$$U_i = E_0 \sum_{t=0}^{\infty} \beta^t u(c_{i,t})$$

► Resources

$$\log(y_{i,t}) = (1 - \rho_y) \mu_y + \rho_y \log(y_{i,t-1}) + \epsilon_{i,t}$$

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- ▶ Asset price bid by risk-neutral *ROW* lender

$$q(y_i, b'_i) = q^{ROW} \pi(y_i, b'_i)$$

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$$\max \{V^D, V^R, V^I, V^S\}$$

# CALIBRATION STRATEGY

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  - ▶ Set default cost, re-admission and impatience parameters

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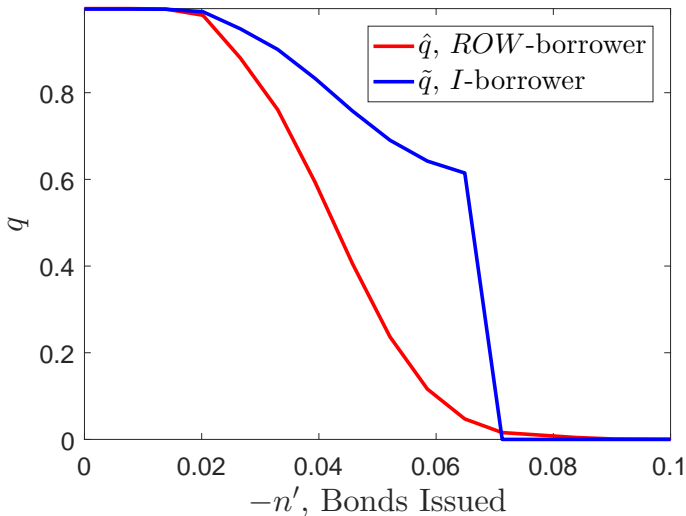
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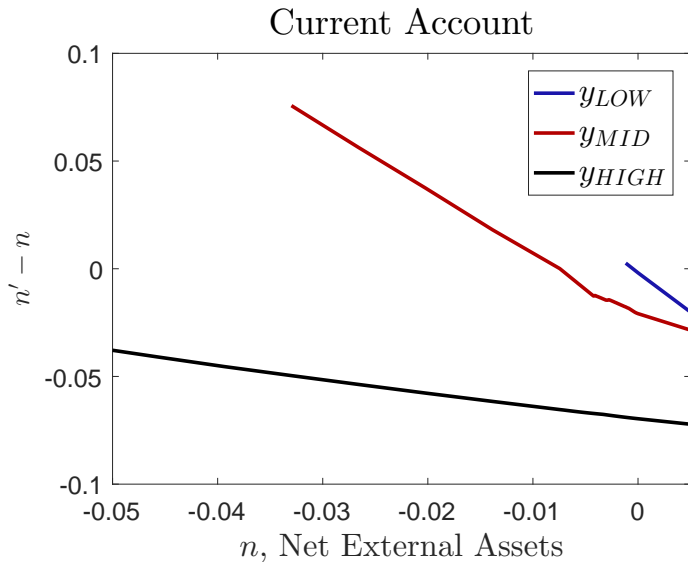
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- ▶ Key targets:
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  - ▶ Standard deviation of current account
- ▶ Study implications of bailout promise for:
  - ▶ Current account
  - ▶ Gross external positions
  - ▶ Distribution of external assets

# INFINITE-HORIZON ECONOMY WITH SUBSIDIES

## Debt Price



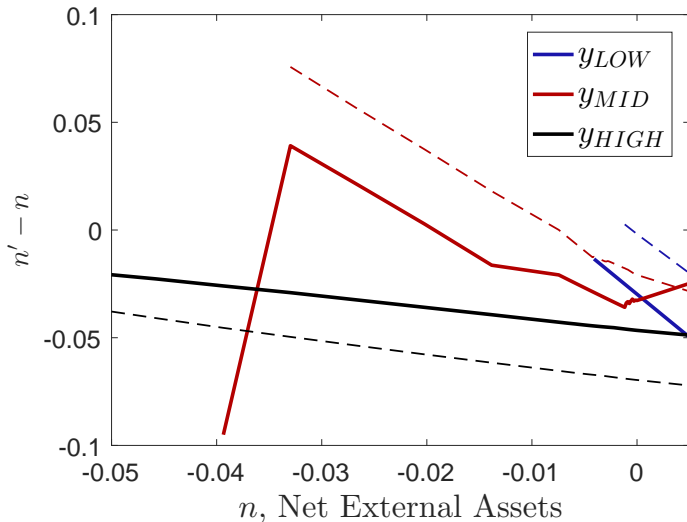
# INFINITE-HORIZON ECONOMY, UNDISTORTED



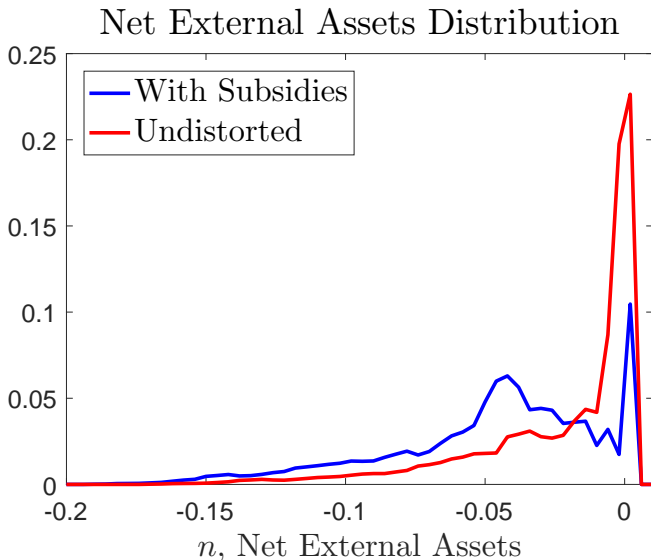


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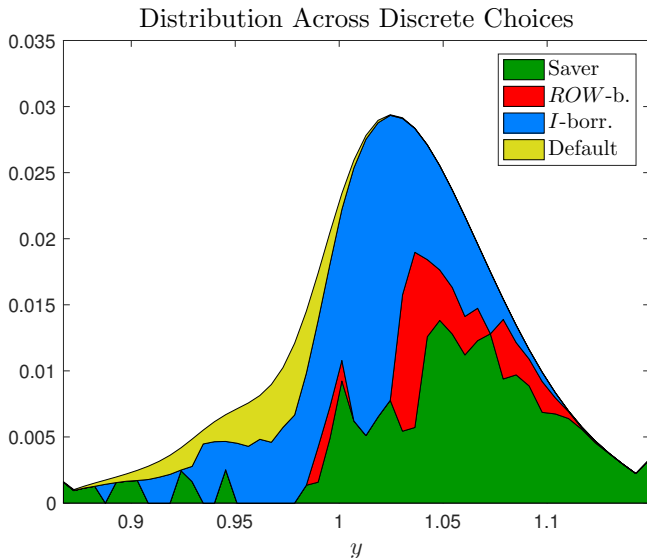
## Current Account



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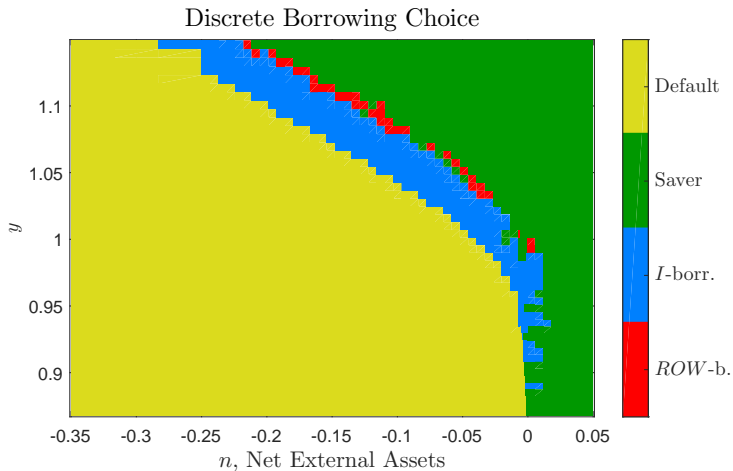
# CONCLUDING REMARKS

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  - ▶ Net and gross capital flows
  - ▶ Expansion of current account imbalances
  - ▶ Severity of debt crisis in an economic union
- ▶ Where to go next
  - ▶ Asymmetric effects on flows to private and public sector
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  - ▶ Monetary policy and the € exchange rate
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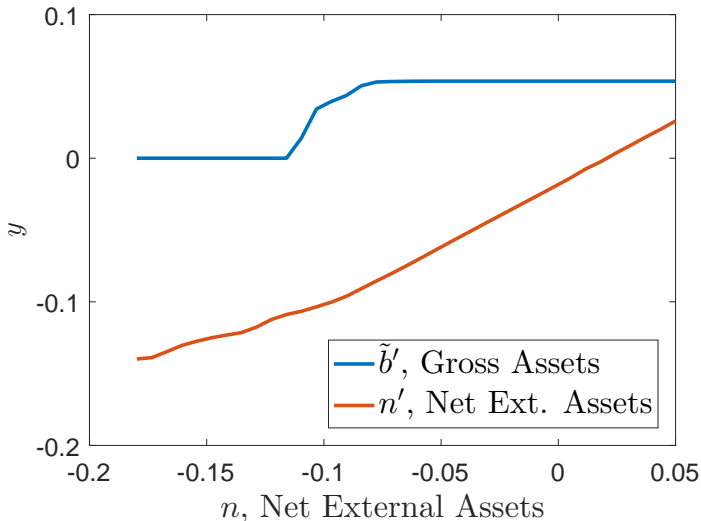
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- ▶ Thanks!

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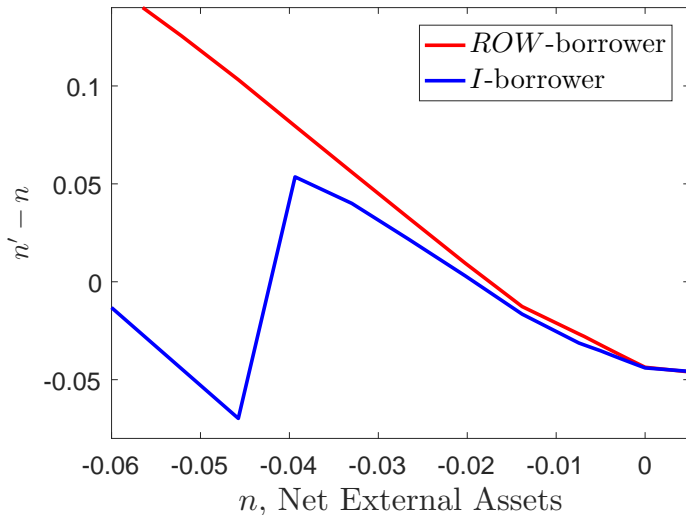
# INFINITE-HORIZON ECONOMY WITH SUBSIDIES

## Intermediation



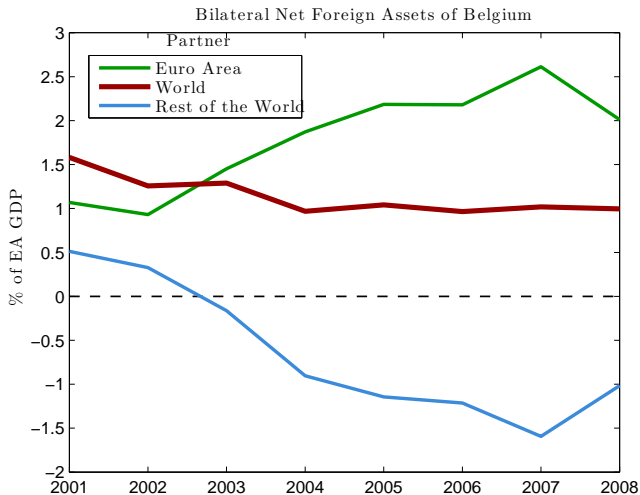
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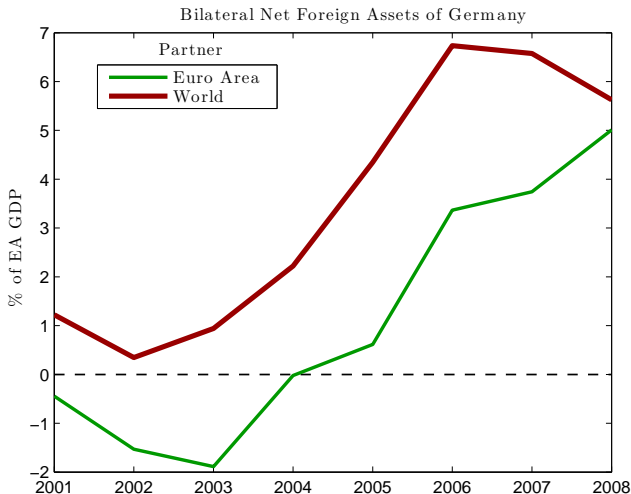




# BILATERAL EXTERNAL POSITIONS - BELGIUM

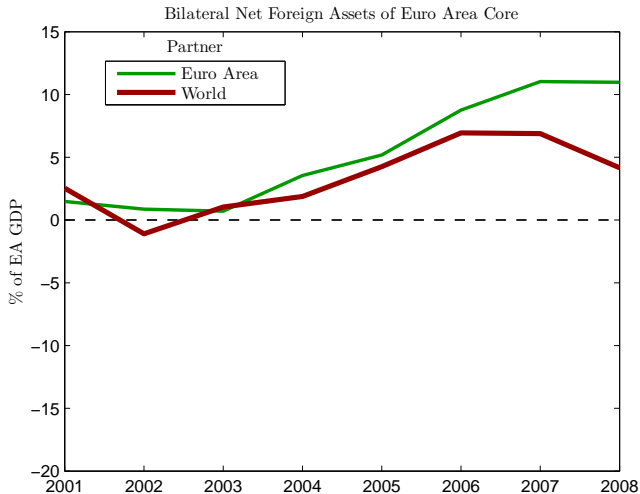


# BILATERAL EXTERNAL POSITIONS - GERMANY

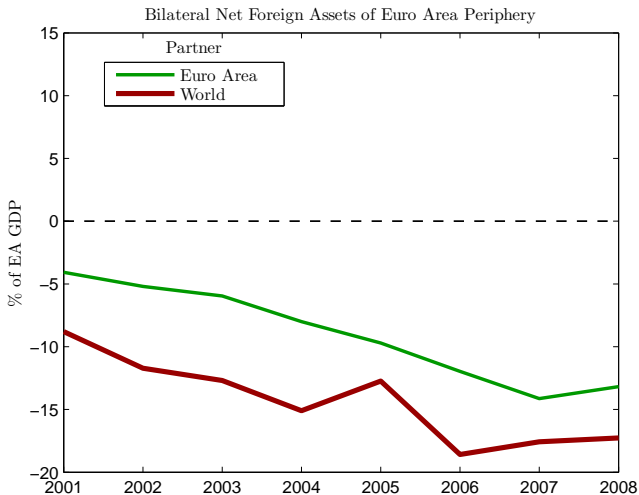


Source: Waysand, Ross, de Guzman (2010) [Back to France](#)

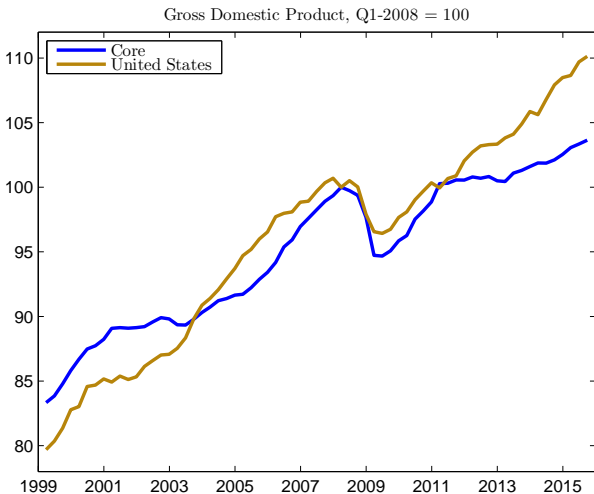
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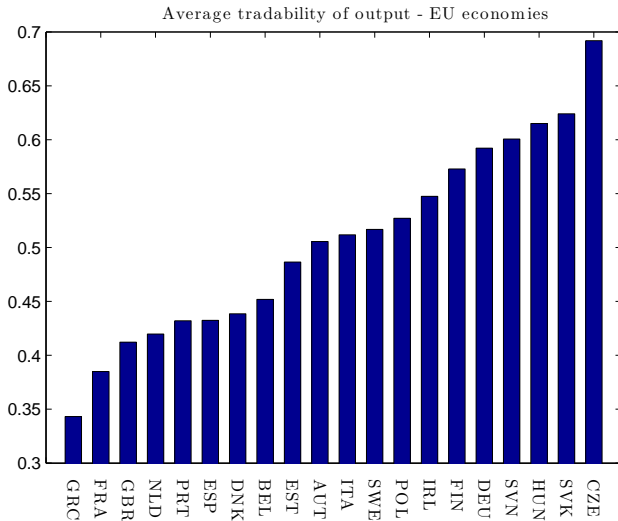


# EUROZONE DEBT CRISIS



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# HETEROGENEOUS TRADABILITY



Source: OECD STAN and TiVA databases, year 2005, and own calculations [Back to Model](#)